

What is claimed is:

1 1. A single bit FIR filter comprising:
2 an input adapted to receive a plurality of serial input bits, said input bits being a single
3 bit wide; said input comprising a predetermined number of input nodes; said input nodes separated
4 into one or more sets of input nodes; said input adapted to allow said plurality of input bits to shift
5 down the length of said input;
6 a storage device having a plurality of memory locations, each said memory location
7 having an address such that bits in a first set of input nodes can be utilized to address one of said
8 memory locations;
9 an output providing an accumulation of the contents of said the memory locations that
10 were addressed.

1 2. The single bit FIR filter of claim 1, wherein said input has a single set of input nodes.

1 3. The single bit FIR filter of claim 1, wherein said input further comprises a second set
2 of input nodes such that bits in said second set of input nodes can be utilized to address a second one
3 of said memory locations, said output providing an accumulation of the contents of first and said
4 second memory locations.

1 4. The single bit FIR filter of claim 1 further comprising an accumulator for receiving
2 the contents of said addressed memory locations such that the output of said single bit FIR filter is an
3 accumulation of the contents of said addressed memory locations.

1 5. A single bit FIR filter for comprising:
2 an input portion for receiving a stream of serial input bits, said input portion
3 comprising a plurality of input node sets, each said input node set is for receiving input bits from said
4 serial stream of input bits;
5 a memory comprising memory locations having an address and a value, said memory
6 locations adapted to be addressed indirectly or directly by the contents at least one of said input node
7 sets
8 an accumulator adapted to receive the contents of said addressed memory locations;
9 said accumulator adding said contents of said addressed memory locations and producing a result;
10 said result being substantially an output of said single bit FIR filter.

1 6. The single bit FIR filter of claim 5, wherein said memory locations are addressed
2 indirectly by having said contents of a first input node set be subjected to an address offset prior to
3 being provided to said memory.

1 7. The single bit FIR filter of claim 5, wherein each input node set comprises the same
2 number of input nodes.

1 8. The single bit FIR filter of claim 5, wherein said input node sets comprise shift
2 registers.

1 9. A method for providing a single bit FIR filter comprising:
2 receiving serial data into an input, said input being divided into sets of input data;
3 using each set of input data to directly or indirectly address memory locations
4 associated with each set of input data;
5 reading the contents of said addressed memory locations;
6 accumulating the contents of said addressed memory locations
7 providing a single bit FIR filter output.

8 10. The method of claim 9 further comprising, after said using step, shifting said input
9 data at least one input data position.

1 11. The method of claim 9 further comprising shifting said input data at least one input
2 data position and after said step of providing repeating said method starting at said step of receiving.

1 12. The method of claim 9 further comprising loading said memory locations with values
2 prior to the step of receiving.

1 13. The method of claim 9, wherein each set of input data comprises the same number of
2 input bits.

1 14. A method of providing a single bit FIR filter comprising:
2 inputting a first bit of a serial stream of data into an input portion;
3 dividing said input portion into sets of data that can be used to address a memory
4 directly or indirectly;
5 addressing a memory location of said memory with at least one set of data;
6 reading the contents of said memory location;
7 accumulating the contents of said memory location with the contents of other memory
8 locations; and
9 providing an output of said accumulator as an output.

1 15. The method of claim 14, wherein each said set of data can be adapted to be used as an
2 address.

1 16 The method of claim 14, wherein a set of data can be used to address a memory
2 indirectly by providing said set of data with an offset.

1 17. The method of claim 14 wherein said input portion is at least on of 8, 16, 32, 64, or
2 128 bits long.